

REMARKS/ARGUMENTS

Claims 29-45 are pending. Claims 29-45 are rejected under 35 U.S.C. § 103. Claims 41-42 are rejected under 35 U.S.C. § 112. Claims 29 and 41-42 have been amended. No new matter has been introduced in the amended claims. Applicants respectfully request reconsideration and allowance of the claims in light of the amendments to the claims and following remarks.

Claim Rejections - 35 U.S.C. § 112

Claims 41 and 42 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 41 and 42 have been amended to clarify the claim language.

Claim Rejections - 35 U.S.C. § 103(a)

Claim 29-41, 43-45

Claim 29 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,251,754 to Ohshima *et al.* ("Ohshima") in view of U.S. Patent 5,141,878 to Benton *et al.* ("Benton") and an article by Moriceau *et al.*, "Hydrogen annealing treatment used to obtain high quality SOI surfaces" ("Moriceau").

Applicants respectfully submit that the features of the present invention recited in claim 29, are not made obvious by the cited references, and have further amend the claim to distinguish the present invention for the cited references. For example, claim 29 recites, in part, "... performing a hydrogen treatment to increase a concentration of hydrogen of said cleaved surface; and performing an etchant and thermal treatment after the hydrogen treatment, the etchant and thermal treatment comprising: increasing a temperature of an environment associated with said cleaved surface to greater than about 1,000° Celsius; and contacting said cleaved surface with a hydrogen bearing environment at least when said temperature of said environment is greater than about 1,000° Celsius to reduce said first surface roughness value by

at least about eighty percent to a second surface roughness value, said hydrogen bearing environment including at least an HCl gas and a hydrogen gas; . . ." None of the cited references, either taken alone or in combination, teach or suggest these features.

Examiner analogizes Moriceau's high temperature annealing to both the hydrogen treatment and the etch and thermal treatment. Examiner states, in part, that "high temperature annealing of the cleaved surface in H₂-HCl mixture inherently increases the hydrogen concentration of the cleaved surface because the mechanism by which the surface area is reduced is by etching as explained in Moriceau." Office Action: p. 4. Claim 29 has been amended to further distinguish the hydrogen treatment from the etch and thermal treatment. Clearly, Moriceau, nor the other cited references, teach or suggest a hydrogen treatment followed by an etch and thermal treatment in the manner claimed in claim 29.

Accordingly, claim 29 should be allowed for at least the above reasons.

Claims 30-41 and 43-45, which depend from claim 29, should be allowed for at least a similar rationale as discussed above for claim 29, as well as for the additional features they recite.

Claim 42

Claim 42 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohshima in view of Benton and Moriceau, and further in view of admitted prior art. Applicants respectfully submit that the features of the present invention recited in claim 42, are not made obvious by the cited references, and have further amend the claim to distinguish the present invention for the cited references. Claim 42 recites, in part, "... performing a hydrogen treatment to increase a hydrogen concentration of said cleaved main surface; and performing an etchant and thermal treatment after the hydrogen treatment, the etchant and thermal treatment comprising: . . ." None of the cited references, either taken alone or in combination, teach or suggest these features. Accordingly, claim 42 should be allowed for at least these reasons.

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PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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